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(54) Title: CATALYTIC MATERIALS FOR SELECTIVE OXIDATION OF ALCOHOLS, PROCESS FOR PRODUCTION THEREOF AND THEIR USE IN ALCOHOL OXIDATION PROCESS

(57) Abstract

A versatile methodology to obtain efficient catalytic materials suitable for selective, liquid-phase oxidations of alcohols is described. Solid inorganic membranes were prepared by the sol-gel procedure by adding a solution of stable organic nitroxyl radicals at the onset of the polymerization of silicon alkoxide monomers. In this way, micro- and mesoporous materials can be obtained that are effective and recyclable catalytic mediators for highly selective oxidations of a vast class of primary and secondary alcohols carried out with several primary oxidants. Delicate substrates such as carbohydrates and allylic alcohols can selectively be oxidised with these novel catalytic materials.

#### ABSTRACT OF THE DISCLOSURE

A versatile methodology to obtain efficient catalytic materials suitable for selective, liquid-phase oxidations of alcohols is described. Solid inorganic membranes were prepared by the sol-gel procedure by adding a solution of stable organic nitroxyl radicals at the onset of the polymerization of silicon alkoxide monomers. In this way, micro- and mesoporous materials can be obtained that are effective and recyclable catalytic mediators for highly selective oxidations of a vast class of primary and secondary alcohols carried out with several primary oxidants. Delicate substrates such as carbohydrates and allylic alcohols can selectively be oxidized with these novel catalytic materials.